IEI Technology Corp.

MODEL:

GENISPOT

Monitor Calibration Kit

User Manual

Rev. 1.01 June, 2008

RoHS Lead Free

Revision

Date	Version	Changes
June, 2008	1.01	Changed software interface titles to “MMD Monochrome Series”
March, 2008	1.00	Initial release

Copyright

COPYRIGHT NOTICE

The information in this document is subject to change without prior notice in order to improve reliability, design and function and does not represent a commitment on the part of the manufacturer.

In no event will the manufacturer be liable for direct, indirect, special, incidental, or consequential damages arising out of the use or inability to use the product or documentation, even if advised of the possibility of such damages.

TRADEMARKS

All registered trademarks and product names mentioned herein are used for identification purposes only and may be trademarks and/or registered trademarks of their respective owners.

Manual Conventions

WARNING!

Warnings appear where overlooked details may cause damage to the equipment or result in personal injury. Warnings should be taken seriously. Warnings are easy to recognize. The word “warning” is written as “**WARNING**,” both capitalized and bold and is followed by text. The text is the warning message. A warning message is shown below:

WARNING:

This is an example of a warning message. Failure to adhere to warning messages may result in permanent damage to the GeniSPOT or personal injury to the user. Please take warning messages seriously.

CAUTION!

Cautionary messages should also be heeded to help reduce the chance of losing data or damaging the GeniSPOT. Cautions are easy to recognize. The word “caution” is written as “**CAUTION**,” both capitalized and bold and is followed. The text is the cautionary message. A caution message is shown below:

CAUTION:

This is an example of a caution message. Failure to adhere to cautions messages may result in permanent damage to the GeniSPOT. Please take caution messages seriously.

NOTE:

These messages inform the reader of essential but non-critical information. These messages should be read carefully as any directions or instructions contained therein can help avoid making mistakes. Notes are easy to recognize. The word “note” is written as “**NOTE**,” both capitalized and bold and is followed by text. The text is the cautionary message. A note message is shown below:

NOTE:

This is an example of a note message. Notes should always be read. Notes contain critical information about the GeniSPOT. Please take note messages seriously.

Packing List

NOTE:

If any of the components listed in the checklist below are missing, please do not proceed with the installation. Contact the IEI reseller or vendor you purchased the GeniSPOT from or contact an IEI sales representative directly. To contact an IEI sales representative, please send an email to sales@iei.com.tw.

The items listed below should all be included in the GeniSPOT package.

- 1 x GeniSPOT calibration tool
- 1 x Utility CD

Images of the above items are shown in **Chapter 2**.

Table of Contents

List of Figures

List of Tables

Chapter

1

Introduction

1.1 Introduction

Figure 1-1: GeniSPOT

The GeniSPOT screen calibration tool is for calibrating monochrome monitors used for diagnostic applications and ensures display consistency, reliability, and conformance to standards.

The GeniSPOT external sensor combined with the GeniPASS software allows the monitor to be adjusted to conform to AAPM, DIN, JIS and IEC standards. The GeniSPOT also features a luminance sensor, so the display brightness is automatically adjusted according to lighting conditions. The self-diagnosis function allows the GeniSPOT to be calibrated for accurate performance.

1.2 System Requirements

In order for the software to function correctly the following system minimum requirements should be met.

1.2.1 Hardware Requirements

The following hardware is required to use the GeniSPOT.

- **CD-ROM** – for driver installation
- **USB port** – for plugging in the GeniSPOT

1.2.2 Software Requirements

The GeniSPOT requires the following software:

- Microsoft® Windows XP

Chapter

2

Unpacking

2.1 Unpacking Precautions

When the GeniSPOT is unpacked, please do the following:

- Make sure the packing box is facing upwards so the GeniSPOT does not fall out of the box.
- Make sure all of the components shown in the next section are present.

2.2 Package Contents

NOTE:

If any of the components listed in the checklist below are missing, do not proceed with the installation. Contact the IEI reseller or vendor that the GeniSPOT was purchased from, or contact and IEI sales representative directly by sending an email to sales@iei.com.tw.

The GeniSPOT is shipped with the following components.

Quantity	Item and Part Number	Image
1	GeniSPOT	
1	Utility CD	

Table 2-1: Packing List Items

Chapter

3

Installation

3.1 Installation Overview

Installation includes setting up the hardware and connecting it to the system, installation of the GeniSPOT drivers and finally, installation of the GeniPASS software.

3.2 Hardware Installation

The GeniSPOT can be installed for a single monitor or multiple monitors. Special instructions for multiple monitors are noted. To install the GeniSPOT please follow the directions below:

Step 1: **Attach the GeniSPOT sensor holder onto the (primary) monitor.** Place the holder on the top of the (primary) monitor so that the two legs are straddling over the front and back of the monitor edge and the cable is facing the rear of the monitor. Turn the screw clockwise to tighten the holder into position.

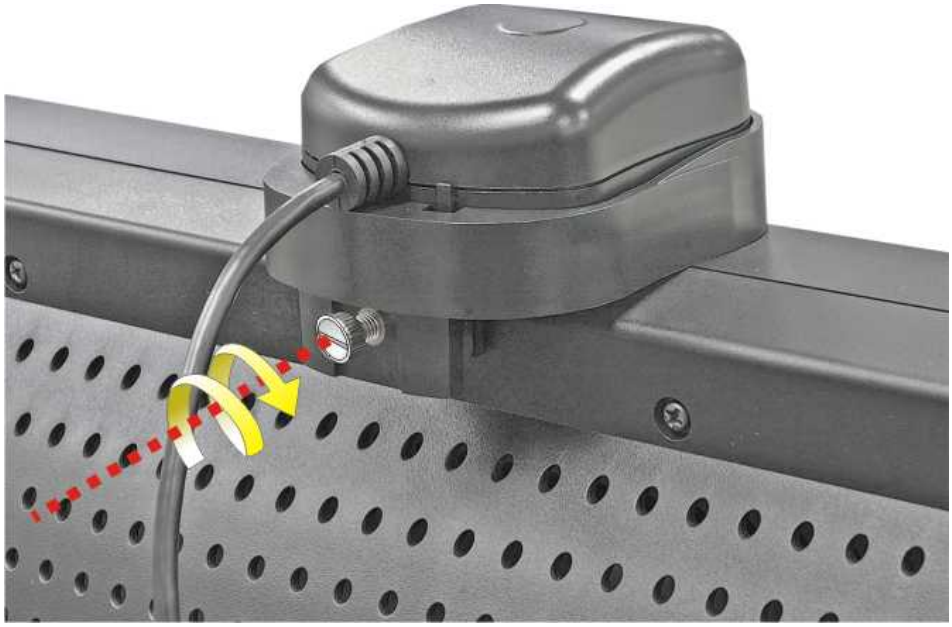

Figure 3-1: GeniSPOT Holder Attachment

Step 2: **Attach the GeniSPOT USB cable to the monitor USB hub, and the monitor to the computer**. Connect the cable from the GeniSPOT to one of the A-series USB ports on the rear panel of the monitor. Attach the USB B-series connector of the included cable (included with the monitor) to the USB B-series port on the

rear panel of the (primary) monitor and the A-series connector to a USB port on the computer system.

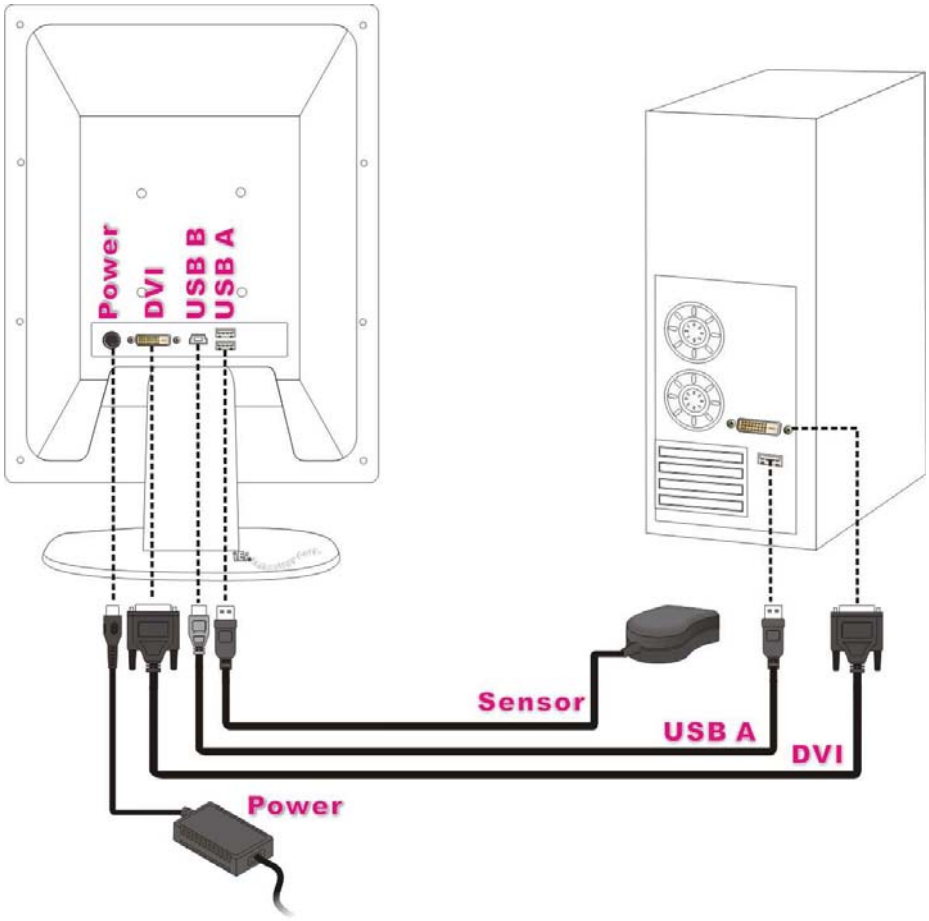

Figure 3-2: USB Cable Setup (Single Monitor)

Step 3: **Attach the USB cables to the second (other) monitors.** Connect the B-series connector of the included cable (included with the monitor) to the monitor, and the A-series end to the computer.

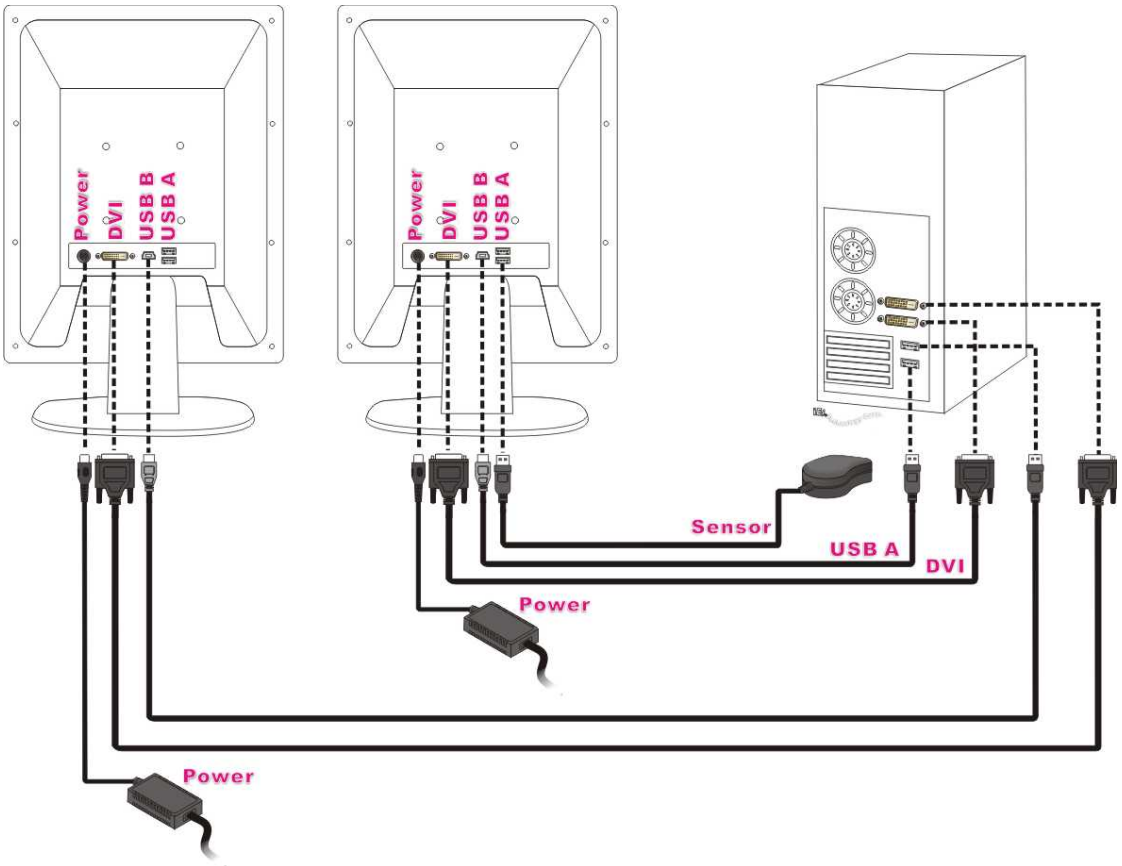

Figure 3-3: USB Cable Setup (Multiple Monitors)

3.3 Driver Installation

To install the drivers for the GeniSPOT please follow the steps outlined below.

Step 1: Connect the GeniSPOT to the system and the hardware installation wizard will automatically appear. Select **"Yes, this time only"** then click **NEXT** to continue.

Figure 3-4: Hardware Installation Wizard

Step 2: Insert the GeniSPOT driver CD into the computer's CD or DVD drive.

Step 3: Select **"Install the software automatically (Recommended)"** and then click **NEXT** to continue.

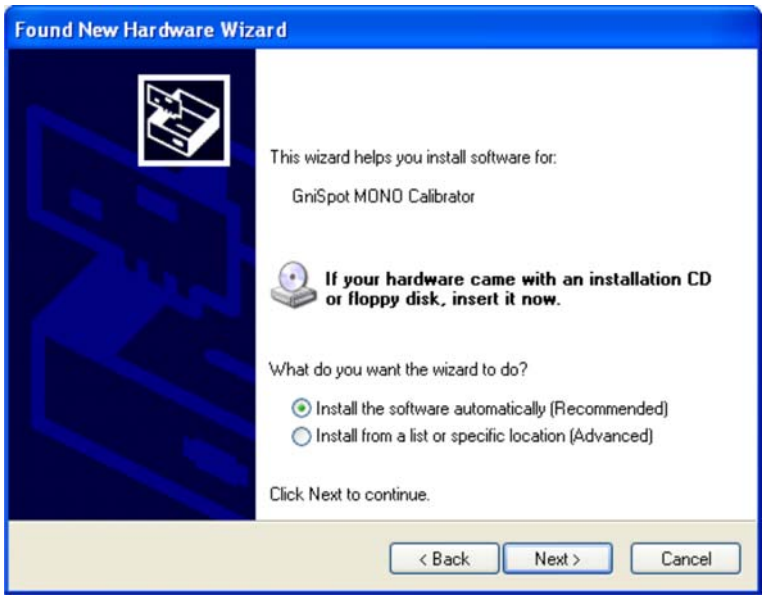

Figure 3-5: Search for Drivers

Step 4: The hardware installation wizard searches for the GeniSPOT drivers.

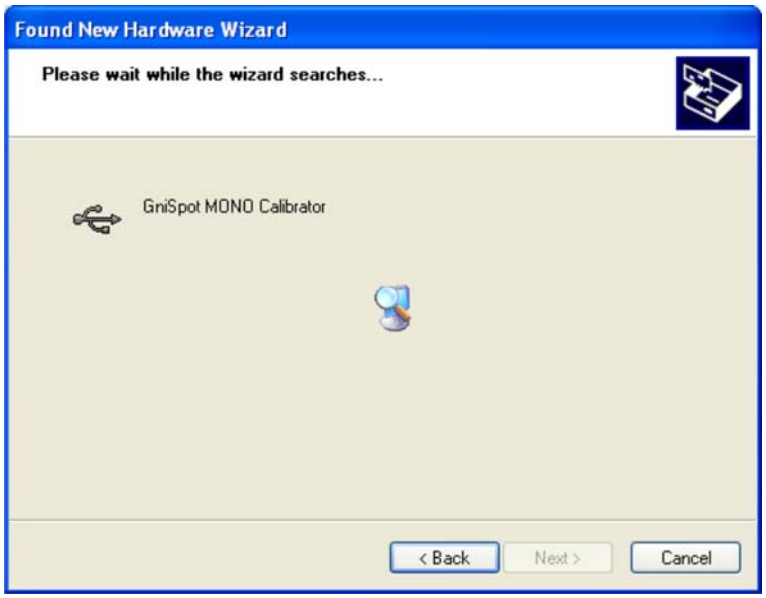

Figure 3-6: Searching for Drivers

Step 5: Select the **"GeniSPOT MONO Calibrator"** and click **NEXT** to continue.

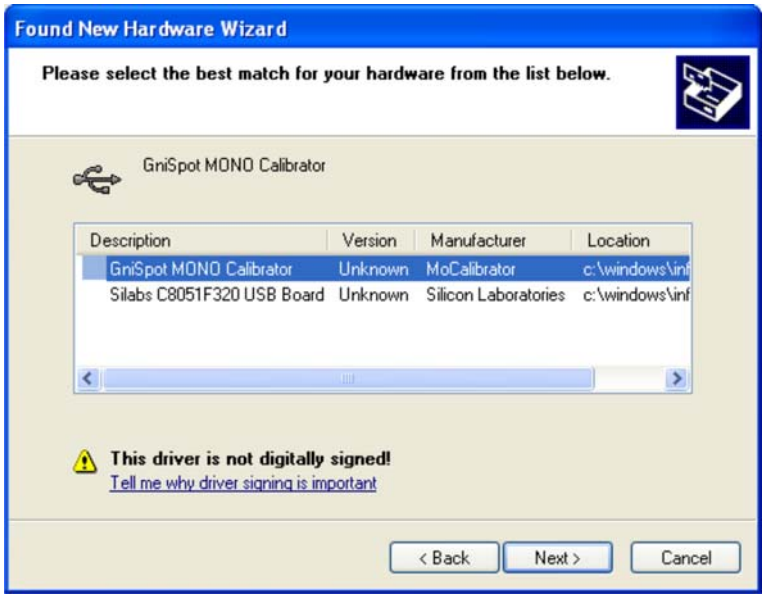

Figure 3-7: Select GeniSPOT Driver

Step 6: The GeniSPOT drivers are installed. This takes a few moments.

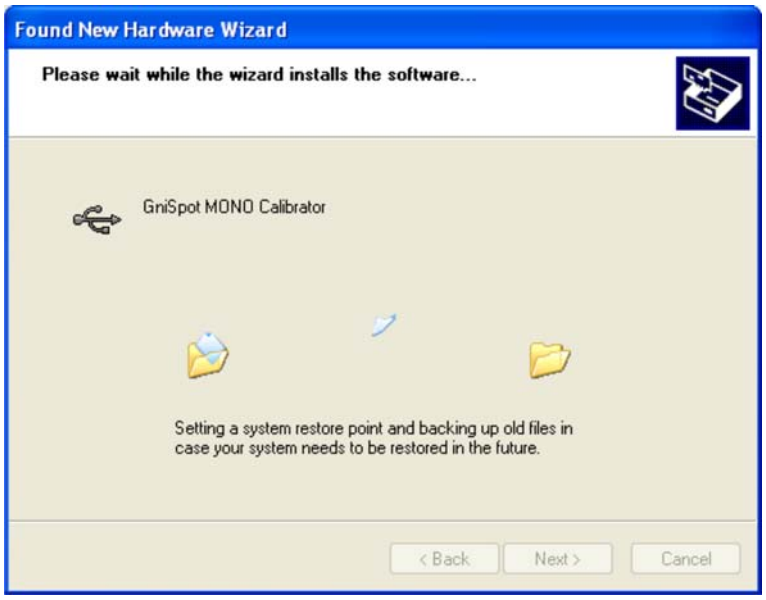

Figure 3-8: GeniSPOT Drivers Installing

Step 7: The GeniSPOT driver installation is complete. Click **FINISH** to complete the installation process.

Figure 3-9: GeniSPOT Driver Installation Complete

3.4 GeniPASS Installation

NOTE:

The drivers for the GeniSPOT must be installed before installing the GeniPASS software. Without the correct drivers the GeniPASS software will not function correctly.

To install the GeniPASS quality control software, follow the directions below:

Step 1: **Insert the driver CD**. The autorun function should start the main menu. Choose the installation to continue. If the menu does not appear go to **Start -> Run** and browse to **E:\setup.exe**.

Step 2: The GeniPASS main installation menu appears. Select **"GeniPASS QC Utility"** to install the GeniPASS monitor quality control software.

Figure 3-10: GeniSPOT Main Menu

Step 3: Select the preferred language for the installation from the dropdown list. Click **OK** to continue.

Figure 3-11: Language Selection

Step 4: The **"GeniPASS Setup Wizard"** welcome screen appears. Click **NEXT >** to continue.

Figure 3-12: Hardware Wizard Welcome

Step 5: Choose the installation folder for the GeniPASS software (default recommended). Click **NEXT >** to continue.

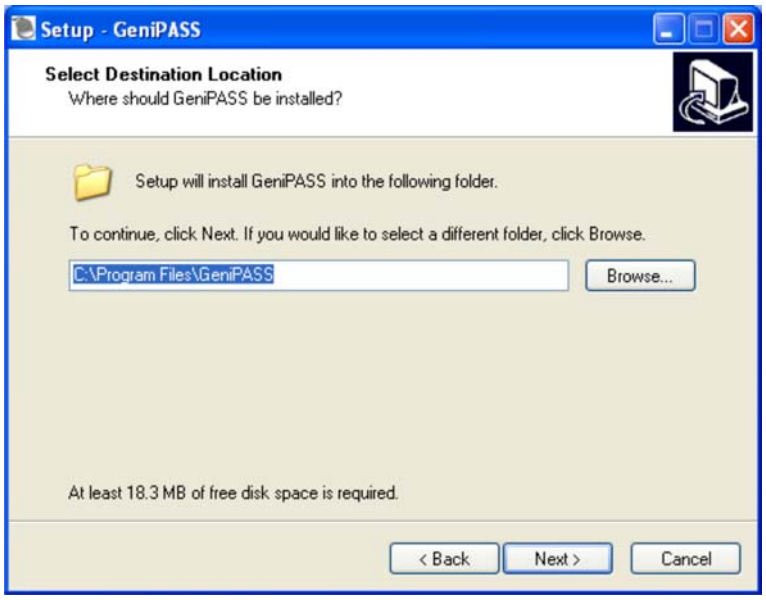

Figure 3-13: Choose Installation Directory

Step 6: Choose the name of the Start Menu folder for the GeniPASS software (default recommended). Click **NEXT** to continue.

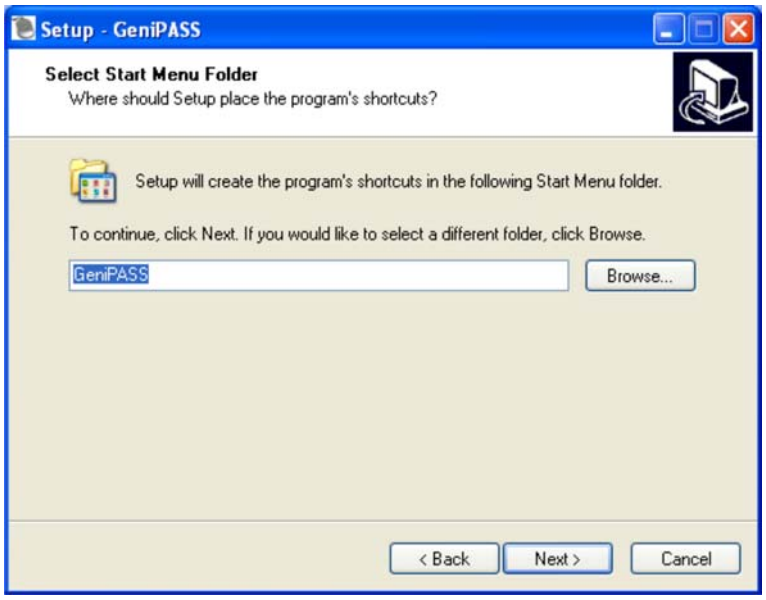

Figure 3-14: Start Menu Folder

Step 7: Select **"Create a desktop icon"** to automatically create an icon on the desktop during installation. Select **"Create a Quick Launch icon"** to automatically

create an icon in the Quick Launch bar during installation. Click **NEXT** to continue.

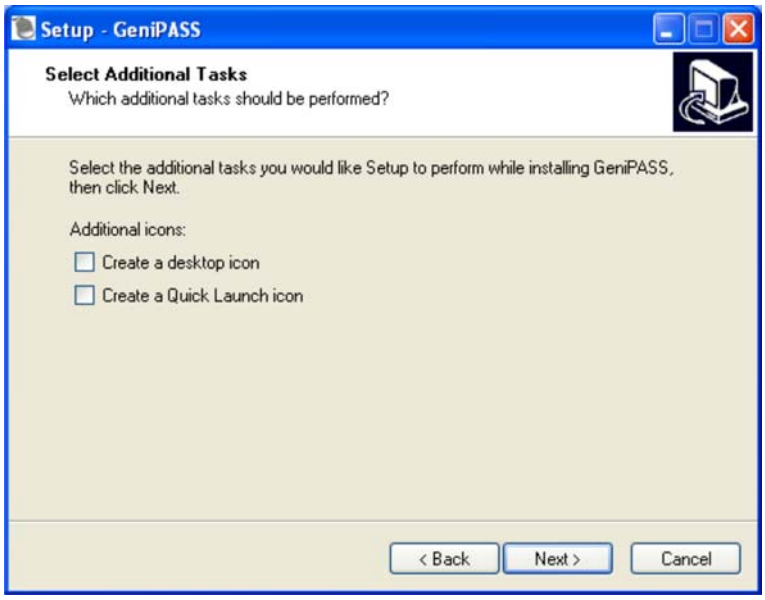

Figure 3-15: Desktop and Quick Launch Icon Selection

Step 8: Check the installation details and click **INSTALL** to begin the installation process.

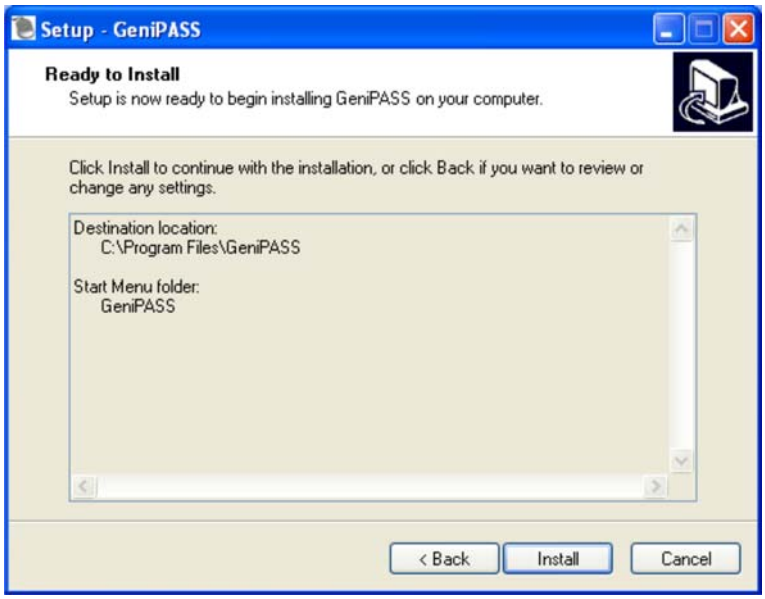

Figure 3-16: GeniPASS Installation Ready

Step 9: The progress indicator shows the installation progress.

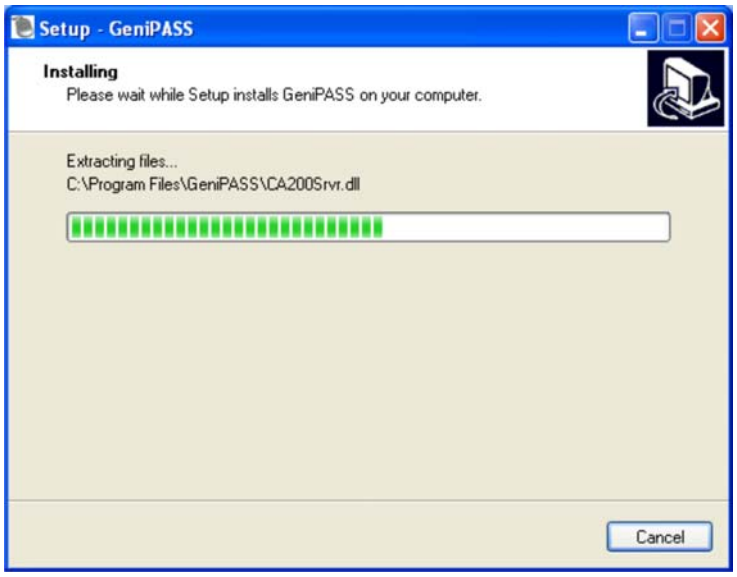

Figure 3-17: GeniPASS Progress Indicator

Step 10: The window indicating successful installation appears. Click **FINISH** to complete the installation process.

Figure 3-18: GeniPASS Installation Complete

Chapter

4

Software Configuration

4.1 Overview

This chapter outlines the configuration of the GeniSPOT software. Before running any tests it is recommended that all the settings be configured. This ensures the best performance from your monitor and sets up important settings. Proceed through this chapter through to the end to fully configure the GeniSPOT.

4.2 Starting GeniPASS

After installation the GeniPASS software can be found by selecting **Start -> All Programs -> GeniPASS** then selecting the **GeniPASS** menu item.

Figure 4-1: GeniPASS Group

The GeniPASS tray icon allows easy access to the GeniPASS functions.

Figure 4-2: GeniPASS Tray Icon

4.3 User Settings

The first time the GeniPASS software is run, all the user settings should be set. After the initial setup, individual settings can be adjusted if needed. To adjust all the user settings, for initial setup, follow the instructions below.

Step 1: Switch to Professional mode to access all the configuration settings (**Section 5.7**).

Step 2: Adjust the user settings indicated below.

1. **Auto-Dimming Control** configures the auto-dimming controls **(Section 4.4)**
2. **Select Monitor** selects the monitor to be tested **(Section 4.5)**
3. **Select Performance Criteria** selects the standards for testing the monitor **(Section 4.6)**
4. **Profile** sets and adjusts user profile settings **(Section 4.7)**

Figure 4-3: User Settings

4.4 Auto-Dimming Control

The **Auto-Dimming Control** window enables, disables and sets the auto-dimming options.

To adjust the auto-dimming controls, follow these steps:

Step 1: Click **Auto-Dimming Control** in the main window.

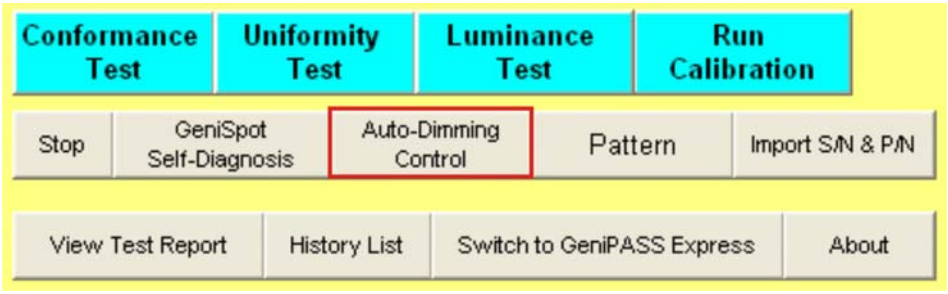

Figure 4-4: Auto-Dimming Control

Step 2: Click **OK** to continue to the Auto-Dimming Configuration screen.

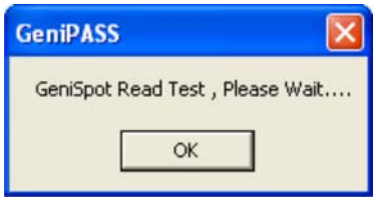

Figure 4-5: Auto-Dimming Prompt

Step 3: The Auto-Dimming Configuration screen appears.

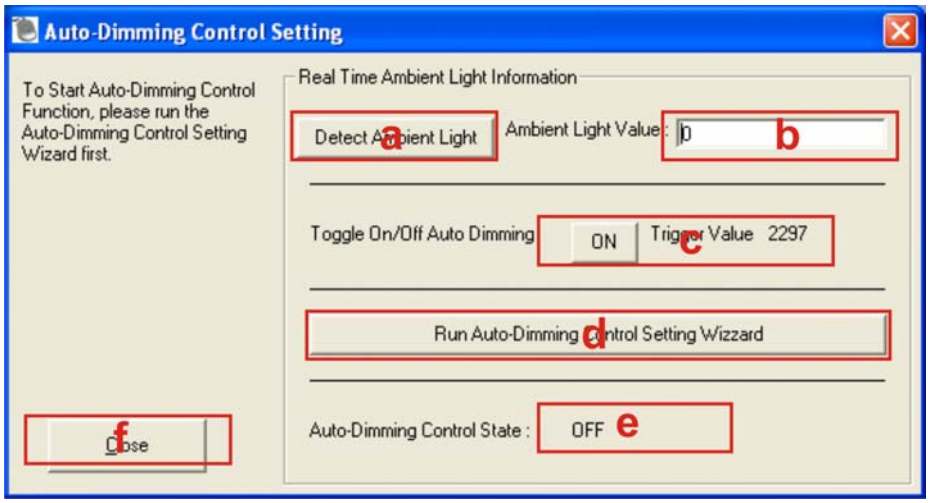

Figure 4-6: Calibration Complete

a. **Detect Ambient Light** detects the level of ambient light (for reference).
b. **Ambient Light Level** shows the results of the ambient light test.
c. **Toggle On/Off** turn the auto-dimming control on/off, the current state of the auto-dimming is shown in **e**.

d. **Run Auto-Dimming Control Setting Wizard** configures the settings for the auto-dimming.

e. **Auto-Dimming Control State** shows whether auto-dimming is on or off.

f. **Close** exits the auto-dimming control window

4.4.1 Auto-Dimming Control Setting Wizard

Step 1: Click the **Run Auto-Dimming Control Setting Wizard Button** to begin the wizard.

Step 2: The Auto-dimming wizard appears.

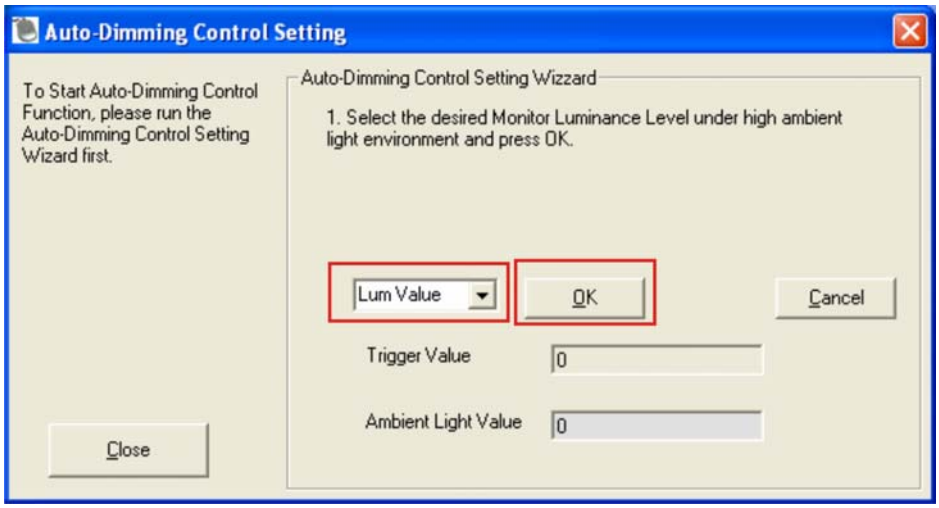

Figure 4-7: Auto-Dimming Wizard Step 1

Step 3: Select the maximum luminance level that the monitor should reach during operation.

Step 4: Adjust the current ambient light level to the light level where the monitor should start displaying the highest luminance.

Step 5: Click **OK** to measure the current light level.

Step 6: The auto-dimming wizard step 2 appears.

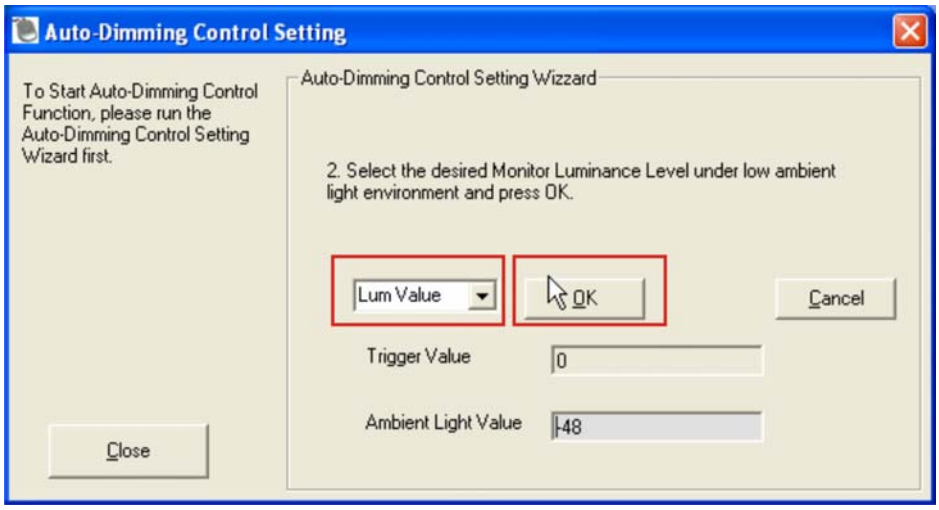

Figure 4-8: Auto-Dimming Wizard Step 2

Step 7: Select the minimum luminance level that the monitor should reach during operation.

Step 8: Adjust the current ambient light to the light level where the monitor should reach the specified minimum luminance.

Step 9: Click **OK** to measure the current light level.

Step 10: The auto-dimming wizard final screen appears.

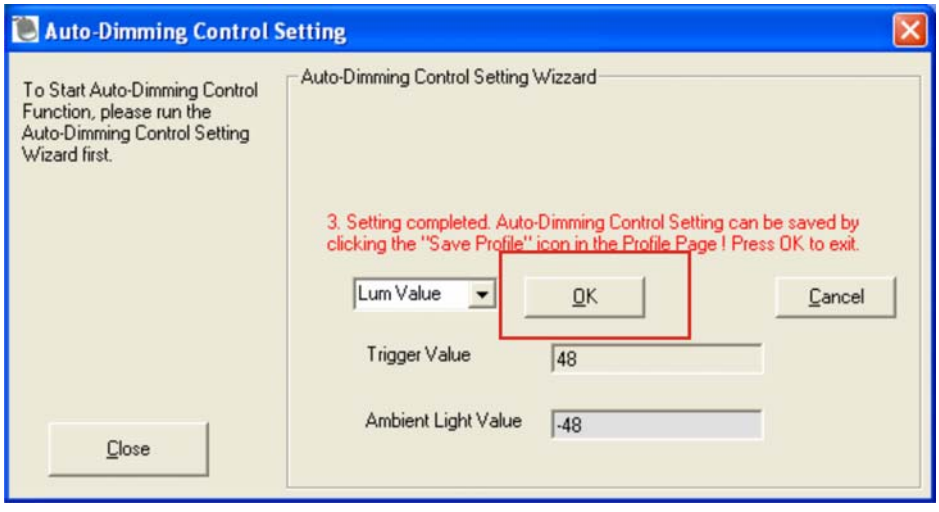

Figure 4-9: Auto-Dimming Wizard Step 3

Step 11: Click **OK** to complete the auto-dimming control settings wizard.

4.5 Select Monitor

The **Select Monitor** option is for choosing which monitor will be tested using the GeniSPOT. To select the monitor for testing, follow these steps:

NOTE:

Test multiple monitors one at a time. It is not necessary to disconnect the GeniSPOT to test another monitor. Leave the GeniSPOT attached to the primary monitor.

Step 1: Click **SELECT MONITOR** in the main window.

Figure 4-10: Select Monitor

Step 2: The **Select Monitor** window appears.

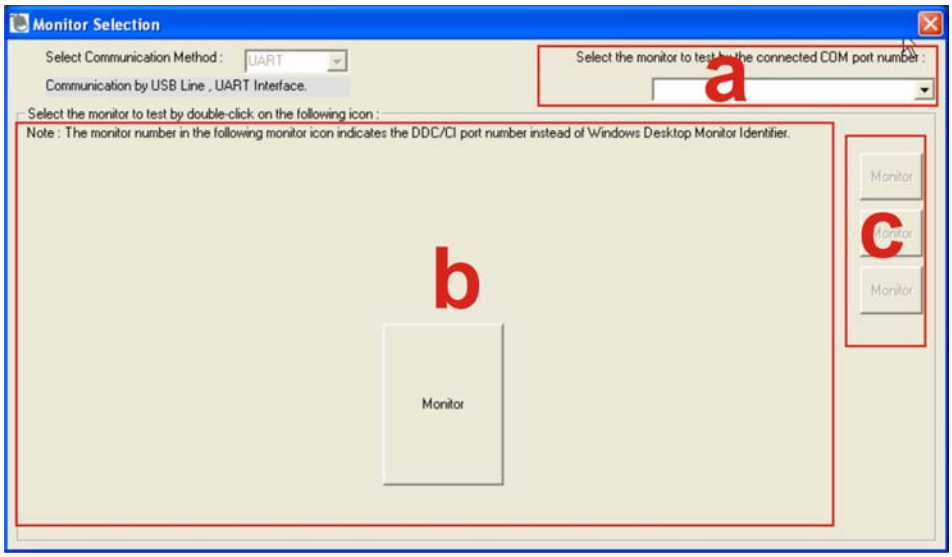

Figure 4-11: Select Monitor

Step 3: Select a monitor. Choosing a monitor automatically selects the monitor and closes the monitor selection window. The monitor is chosen by one of the following options

a. COM port number
b. Visual representation (numbered according to DDC/CI port number and not Windows Desktop Monitor Identifier)
c. Monitor list

4.6 Select Conformance Criteria

The **Select Conformance Criteria** option is for choosing which monitor will be tested using the GeniSPOT.

To select the conformance criteria for testing, follow these steps:

Step 1: Click **SELECT CONFORMANCE CRITERIA** in the main window.

Figure 4-12: Conformance Test

Step 2: The **Select Conformance Criteria** window appears.

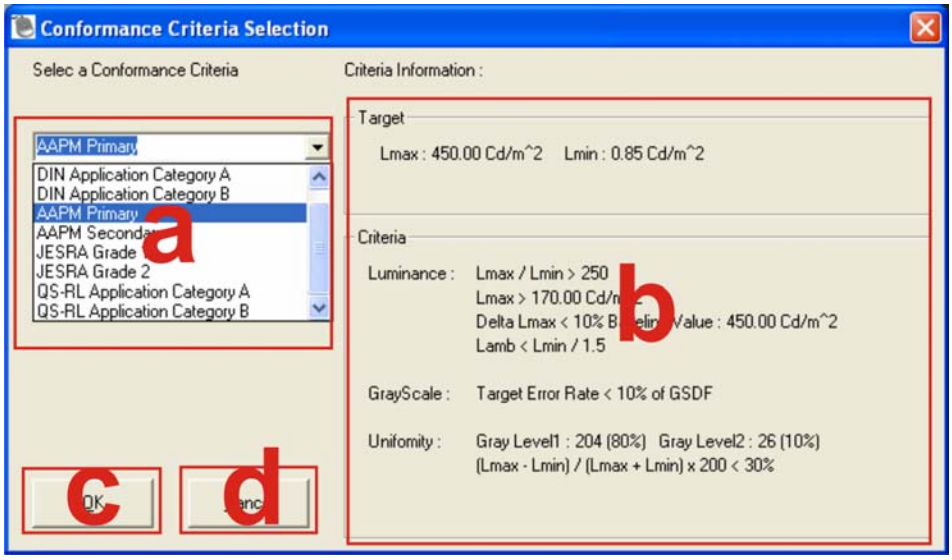

Figure 4-13: Select Conformance Criteria

Step 3: Select the standard for conformance from the dropdown list (labeled "**a**").

Section "**b**" displays the details for the selected conformance standard.

Step 4: Click **OK** (labeled "**c**") to accept the settings and exit.

Click **CANCEL** (labeled "**d**") to discard changes and exit.

4.7 Profile

Profile allows setting of personalized options and for loading previously saved settings.

To adjust the current user profile, follow these steps:

Step 1: Click **PROFILE** in the main window.

Figure 4-14: Profile

Step 2: The **Profile** window appears.

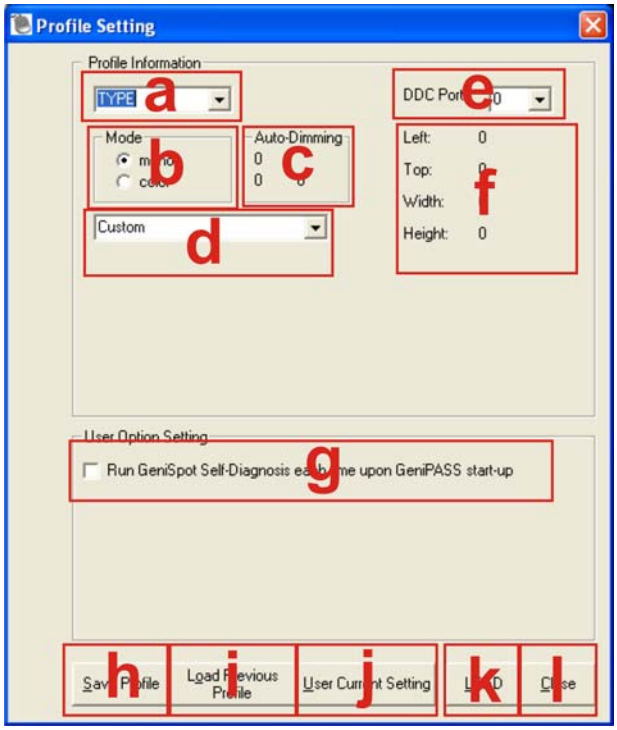

Figure 4-15: Profile

Step 3: The **Profile** menu settings are listed below:

a. Select the type of monitor for testing.

b. Select whether the monitor is color or monochrome.

c. Displays auto-dimming settings (auto-dimming settings can be adjusted in the auto-dimming window 4.4).

d. Select the conformance standard to use for testing and calibration.

e. Select the DDC Port to use.

f. Displays the position and size of the test images.

g. Check this option to run a self-diagnosis of the GeniSPOT when the software is started.

h. **SAVE PROFILE** saves the currently displayed profile settings.

i. **LOAD PREVIOUS PROFILE** loads the previously saved settings.

j. **USER CURRENT SETTING** loads the settings from the main window and the user setting windows into the current **Profile Setting** window.

k. **LOAD** loads the **Profile Setting** options into the main window.

l. **CLOSE** exits the current window without saving and returns to the main window.

Chapter

5

Basic Functions

5.1 Overview

This chapter gives an overview of all the functions of the GeniPASS Express Mode.

NOTE:

Turn off auto-dimming before performing any calibration or tests.

The GeniPASS software starts in Express mode. All the necessary features for day-to-day use can be found in the Express mode interface. The figure below shows the GeniPASS Express window and is followed by a brief explanation of each button's function.

1. **Conformance Test** tests the conformance of the selected monitor **(Section 5.2)**
2. **Uniformity Test** tests the uniformity of the selected monitor **(Section 5.3)**
3. **Luminance Test** tests the luminance of the selected monitor **(Section 5.4)**
4. **Run Calibration** calibrates the monitor using the previous test results **(Section 5.5)**
5. **History List** displays a list of the results of all previous tests **(Section 5.6)**
6. **Switch to GeniPASS Pro** changes to Professional mode **(Section 5.7)**
7. **View Test Report** displays the results of the last test **(Section 5.8)**
8. **Configuration** opens a list with the following options:
   a. **Select Monitor** selects the monitor to be tested **(Section 4.5)**
   b. **Select Performance Criteria** selects the standards for testing the monitor **(Section 4.6)**
   c. **Profile** sets and adjusts user profile settings **(Section 4.7)**
9. **Exit** closes GeniPASS
10. **About** displays information about GeniPASS **(Section 5.9)**

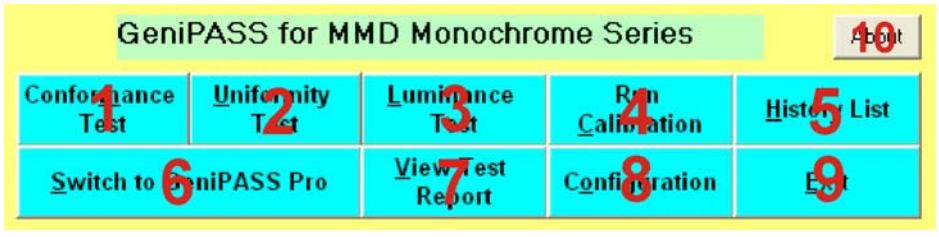

Figure 5-1: GeniPASS Express

5.2 Conformance Test

The conformance test compares the luminance read by the GeniSPOT to the luminance that should be produced by the monitor at different luminance levels.

To perform the conformance test, follow these steps:

Step 1: Click **CONFORMANCE TEST** in the main window. The conformance test starts automatically.

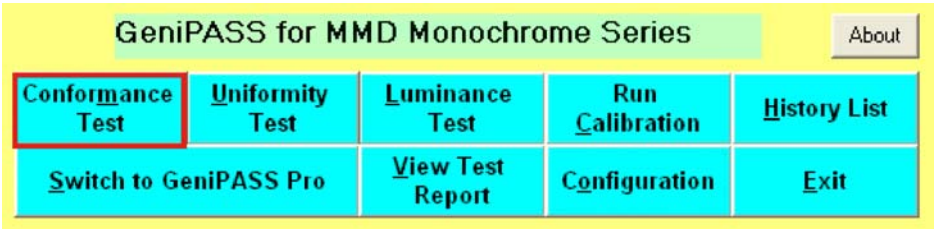

Figure 5-2: Conformance Test

Step 2: Place the GeniSPOT in the white block and click **OK** to continue.

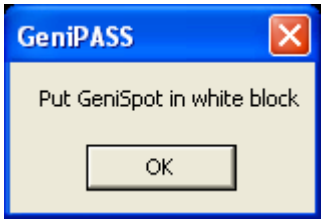

Figure 5-3: Conformance Start

Step 3: The GeniPASS software displays a white screen, then a black screen and then progresses from black and through the grays to white. The process takes a few minutes. No other software should be used while the conformance test is being performed. The GeniSPOT must remain in the same position at the center of the monitor throughout the test.

Figure 5-4: Conformance Test Progress

Step 4: **Wait for the conformance test to finish.** When finished, click **OK** to complete the conformance test.

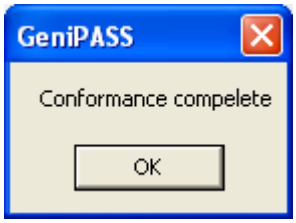

Figure 5-5: Conformance Complete

5.3 Uniformity Test

The uniformity test tests the uniformity of the screen. The center, top-left, bottom-left, bottom-right and top-right are tested and the values compared to determine the evenness of the screen's brightness.

To perform the uniformity test, follow these steps:

Step 1: Click **Uniformity Test** in the main window.

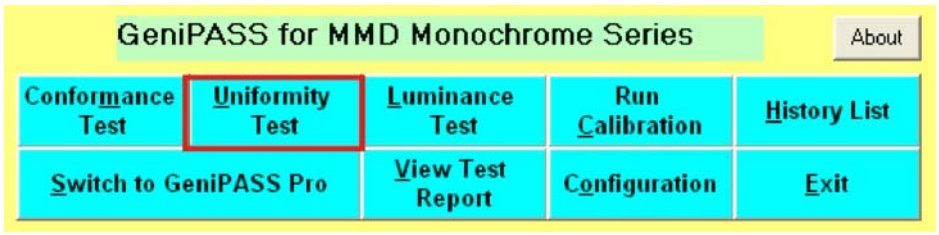

Figure 5-6: Uniformity Test

Step 2: The **Uniformity Test** window appears. The uniformity test window displays the readings from the uniformity test. Click the **UNIFORMITY TEST** button to start testing the uniformity of the monitor.

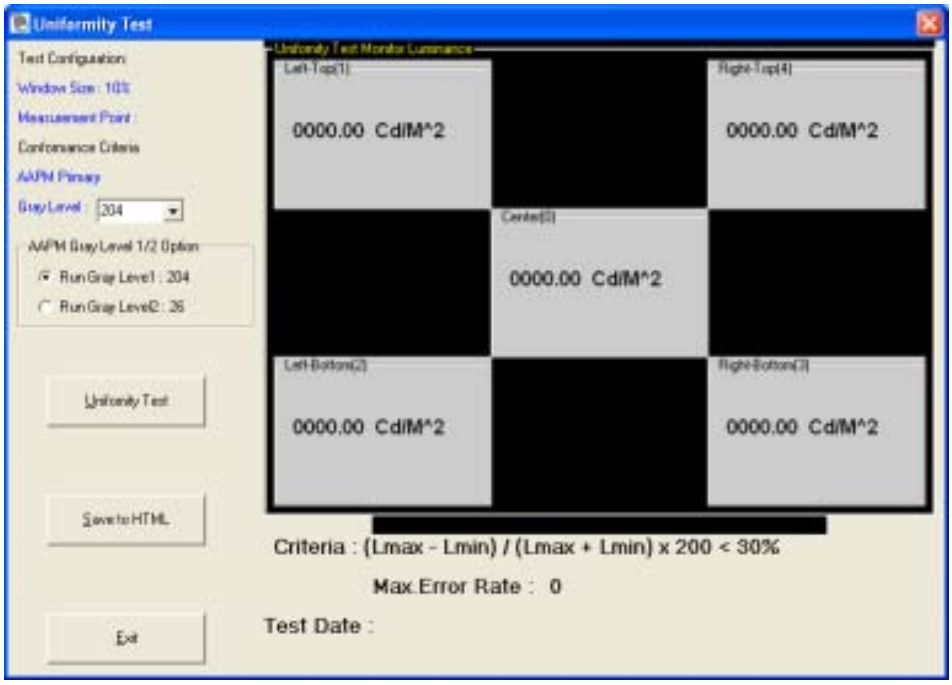

Figure 5-7: Uniformity Test Window

Step 3: Place the GeniSPOT in the center white block and click **OK** to continue.

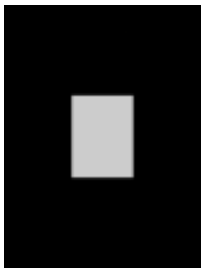

Figure 5-8: Center Block

Step 4: Place the GeniSPOT in the top-left white block and click **OK** to continue.

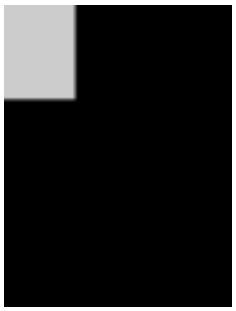

Figure 5-9: Top-Left Block

Step 5: Place the GeniSPOT in the bottom-left white block and click **OK** to continue.

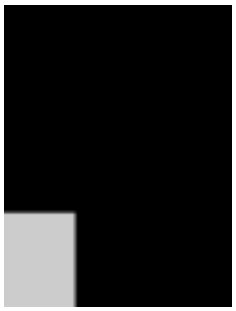

Figure 5-10: Bottom-Left Block

Step 6: Place the GeniSPOT in the bottom-right white block and click **OK** to continue.

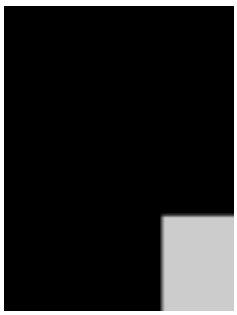

Figure 5-11: Bottom-Right Block

Step 7: Place the GeniSPOT in the top-right white block and click **OK** to continue.

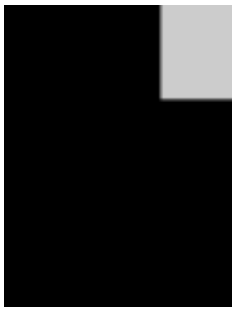

Figure 5-12: Top-Right Block

Step 8: **The Uniformity Test window appears again.** The results of the uniformity test are shown. Click **SAVE TO HTML** to save the results to another HTML file (this is in addition to the HTML file automatically saved for every test). Click **OK** to leave the **Uniformity Test** window.

5.4 Luminance Test

The luminance test tests the ability of the monitor to correctly produce different levels of brightness. The test gradually moves from a black screen, through shades of gray, to a fully white screen.

To perform the luminance test, follow these steps:

Step 1: Click **Luminance Test** in the main window. The luminance test starts automatically.

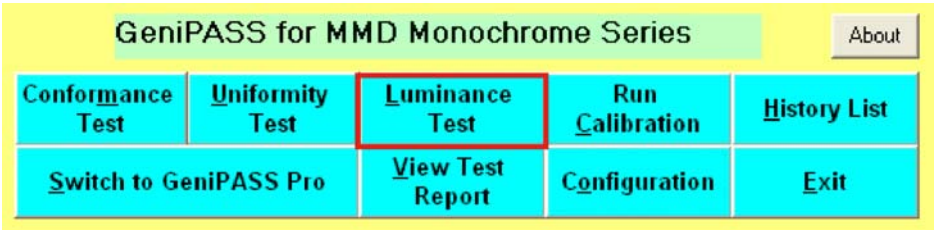

Figure 5-13: Luminance Test

Step 2: The luminance test window appears. The luminance test window shows criteria for the test and the results of the test. Click **RUN TEST** to continue.

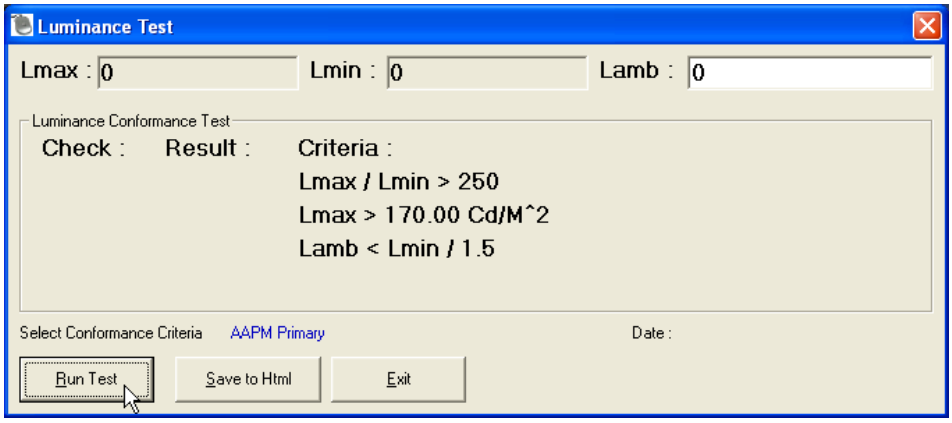

Figure 5-14: Luminance Test Window

Step 3: Place the GeniSPOT in the white block. Don't move the GeniSPOT until prompted. Click **OK** to start the luminance test.

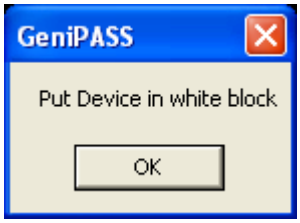

Figure 5-15: Start Luminance Test

Step 4: Click **OK** to complete the Luminance Test.

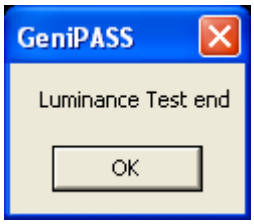

Figure 5-16: Luminance Test Complete

Step 5: **The Luminance Test window appears again.** The results of the luminance test are shown. Click **SAVE TO HTML** to save the results to another HTML file (this is in addition to the HTML file automatically saved for every test). Click **OK** to leave the **Luminance Test** window.

5.5 Run Calibration

Run Calibration sets the calibration of the monitor. The calibration gradually moves from a black screen, through shades of gray, to a fully white screen.

To **Run Calibration**, follow these steps:

Step 1: Click **Run Calibration** in the main window.

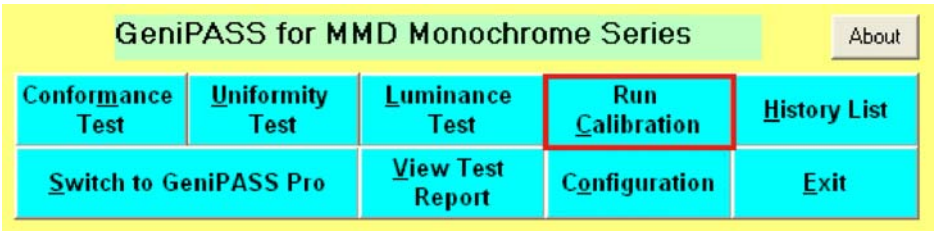

Figure 5-17: Run Calibration

Step 2: Place the GeniSPOT in the white block. Don't move the GeniSPOT until prompted. Click **OK** to start the calibration test.

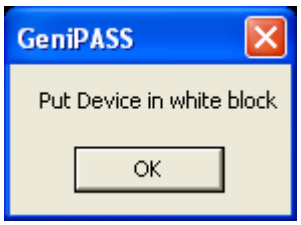

Figure 5-18: Start Calibration

Step 3: The calibration test runs through the screen colors from black to white as shown in the figure below.

Figure 5-19: Calibration Test

Step 4: Click **OK** to complete the Calibration Test.

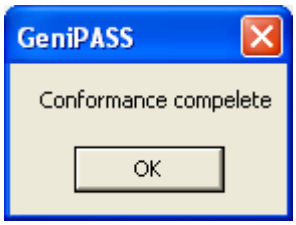

Figure 5-20: Calibration Complete

NOTE:

If calibration is successful, luminance is reset to 450 nit.

5.6 History List

History List displays the results of all the previous tests. The tests are all saved as HTML files and stored. The **History List** provides a list of all those saved files. To view the previous test results, follow the steps below.

Step 1: Click the **History List** button to display the results.

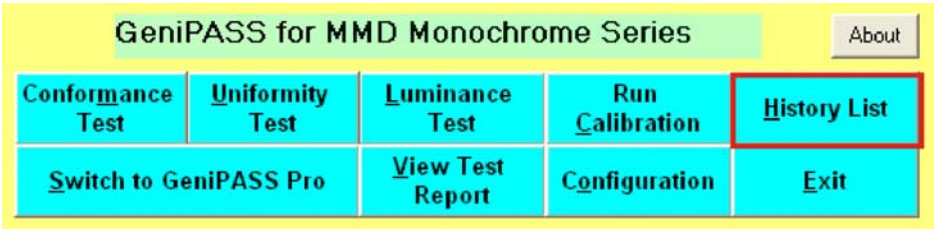

Figure 5-21: History List

Step 2: The **History List** window appears.

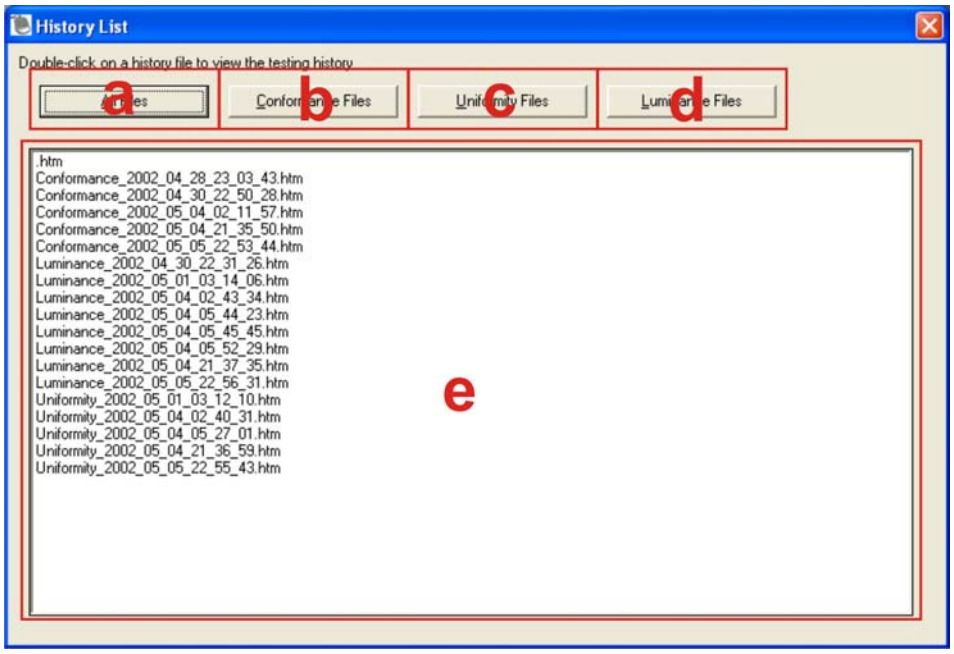

Figure 5-22: History List Window

Step 3: Click one of the buttons **a – d** to display the results of that test in section **e**.

a. **ALL FILES** shows all the results files
b. **CONFORMANCE FILES** shows the results of all conformance tests
c. **UNIFORMITY FILES** shows the results of all uniformity tests
d. **LUMINANCE FILES** shows the results of all luminance tests
e. Displays the results chosen by clicking one of the buttons **a – d** above

Step 4: To view results from the list, double-click the filename.

Step 5: The results open in the default web browser.

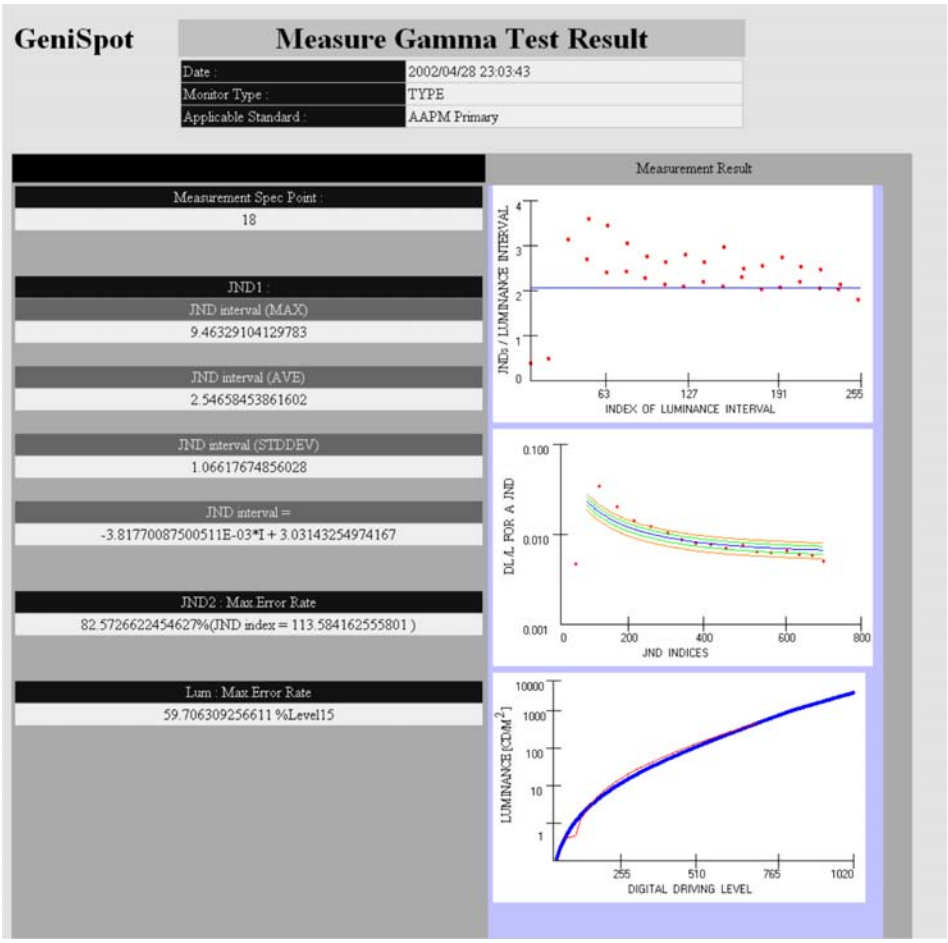

Figure 5-23: HTML Results Page

5.7 Switch to GeniPASS Pro

The **SWITCH TO GENIPASS PRO** button switches from the GeniPASS Express interface to the GeniPASS professional interface. To switch to the GeniPASS professional interface, click the **SWITCH TO GENIPASS PRO** button.

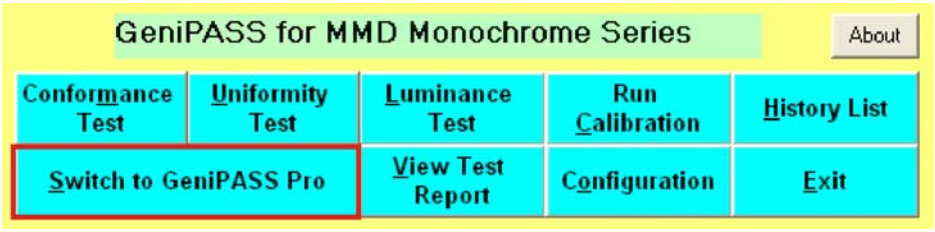

Figure 5-24: Switch to GeniPASS Pro

5.8 View Test Report

VIEW TEST REPORT displays the results of the last test in a popup window. To view the test reports, follow the steps below.

Step 1: Click the **VIEW TEST REPORT** button to display the results.

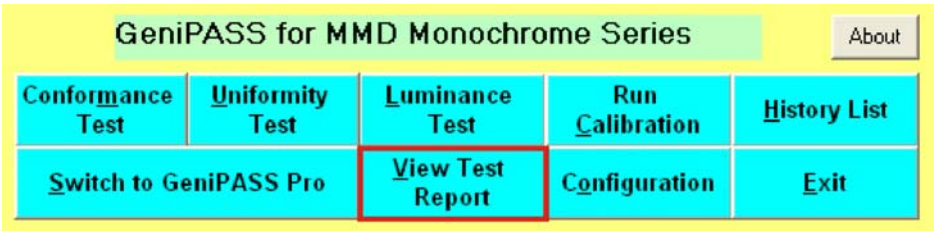

Figure 5-25: View Test Report

Step 2: The **View Test Report** window appears.

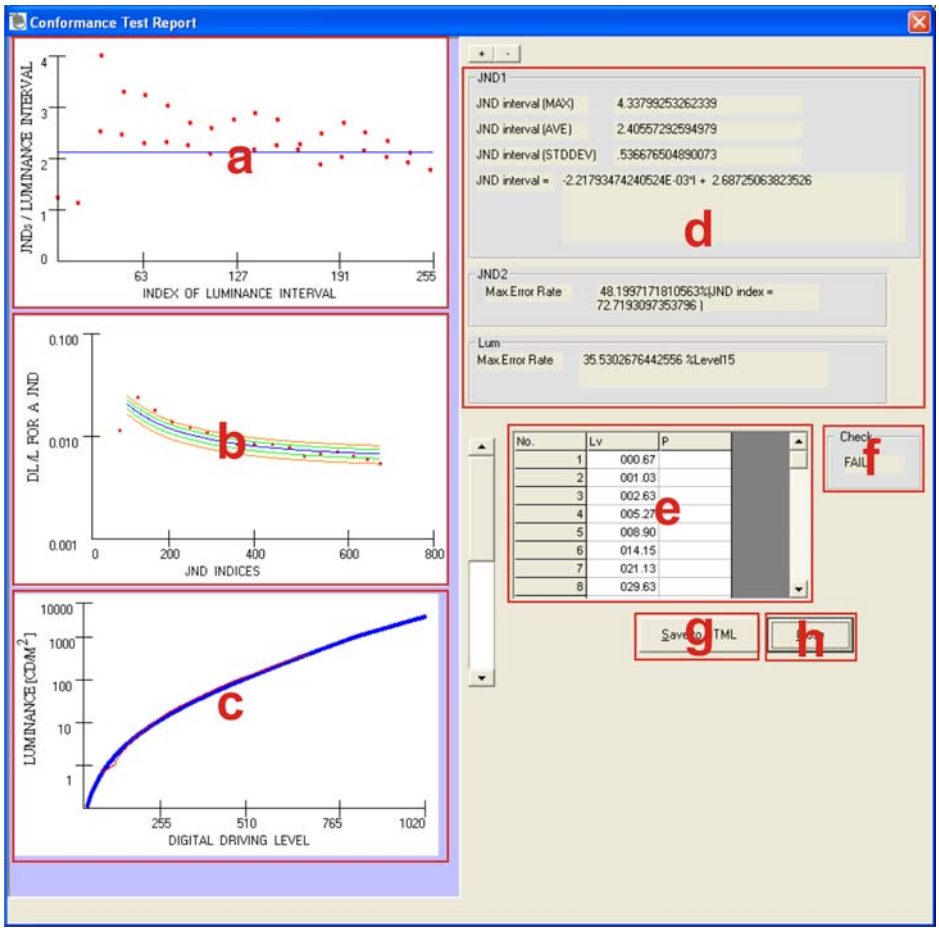

Figure 5-26: View Test Report Window

The **View Test Report** window shows the following:

a. JNDs / Luminance Interval vs. Index of Luminance Interval graph
b. KL/L for A JND vs. JND Indices graph
c. Luminance (cd/m^2) vs. digital driving level graph
d. Test results
e. Luminance value table
f. Check result
g. **SAVE TO HTML** saves the current results to an HTML file
h. **CLOSE** exits the window and returns to the main window

5.9 About

The **About** window displays general information about the GeniPASS software, including revision information.

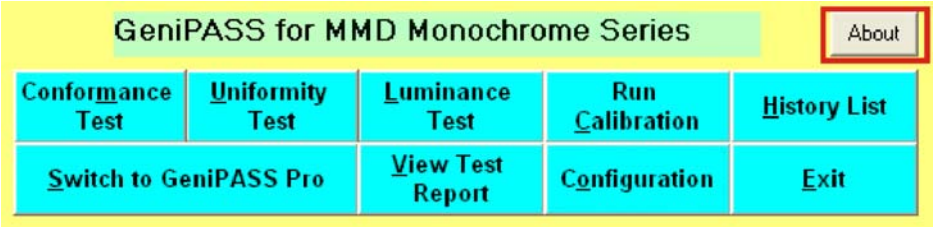

Figure 5-27: About

Chapter

6

Advanced Functions

6.1 Overview

GeniPASS Professional mode provides a more complex interface for GeniPASS. There are a few options available in the Professional interface that are not offered in the Express interface. The details for the additional options are included in this section, while those that are shared with the Express interface refer to the **Basic Functions** section.

To switch to the GeniPASS professional interface, refer to section 5.7.

GeniPASS Professional allows easier control over the configuration of the GeniPASS software. The figure below outlines the options available and a brief description of what they do.

Figure 6-1: GeniPASS Main Window

1. **Conformance Test** tests the conformance of the selected monitor **(Section 5.2)**
2. **Uniformity Test** tests the uniformity of the selected monitor **(Section 5.3)**
3. **Luminance Test** tests the luminance of the selected monitor **(Section 5.4)**
4. **Run Calibration** calibrates the monitor using the previous test results **(Section 5.5)**
5. **Stop** stops the current operation **(Section 6.2)**
6. **GeniSPOT Self-Diagnosis** checks the GeniSPOT's calibration **(Section 6.3)**
7. **Auto-Dimming Control** configures the auto-dimming controls **(Section 4.4)**
8. **Pattern** opens the white pattern window **(Section 6.4)**
9. **Import S/N & P/N** imports serial number and part numbers from connected monitors **(Section 6.5)**
10. **View Test Report** displays the results of the last test **(Section 5.8)**
11. **History List** displays a list of the results of all previous tests **(Section 5.6)**
12. **Switch to GeniPASS Express** changes to Express mode **(Section 6.6)**
13. **About** displays information about the GeniPASS software **(Section 5.9)**

14. **Select your Monitor** selects the monitor to be tested **(Section 6.7)**
15. **Select Monitor** selects the monitor to be tested **(Section 4.5)**
16. **Select Performance Criteria** selects the standards for testing the monitor **(Section 4.6)**
17. **Profile** sets and adjusts user profile settings **(Section 4.7)**

6.2 Stop

Stop halts the current test and returns to the main window.

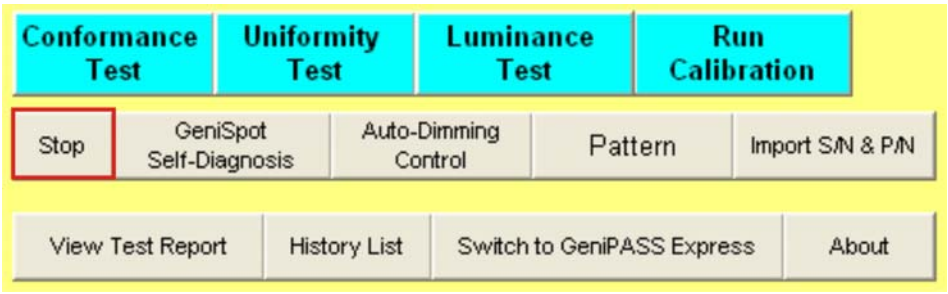

Figure 6-2: Stop Button

6.3 GeniSPOT Self-Diagnosis

GeniSPOT Self-Diagnosis tests the GeniSPOT to check if it is functioning correctly and that its measurements are within specification.

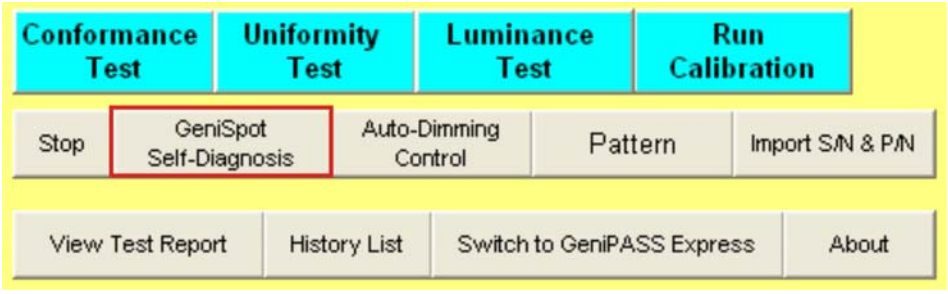

Figure 6-3: GeniSPOT Self-Diagnosis

6.4 Pattern

Pattern displays a white window that fills the whole screen.

Step 1: Click **Pattern** in the main window.

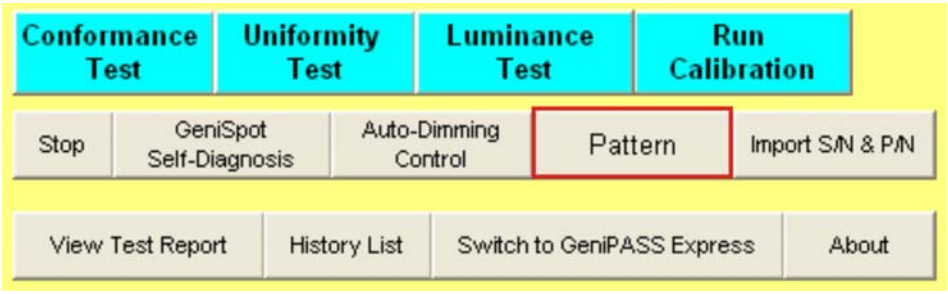

Figure 6-4: Pattern

Step 2: The **Pattern** window appears.

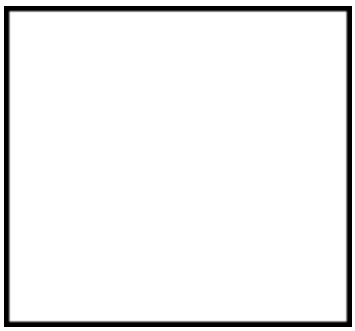

Figure 6-5: Pattern Window

Step 3: Double-click anywhere on the window to display the menu.

Figure 6-6: Pattern Window Options

The pattern window has the following options.

a. **Hide Menu** hides the pattern window options menu.
b. **Close Geni** closes the GeniPASS program.
c. **Stop Window** closes the pattern window and returns to the GeniPASS main window.

6.5 Import S/N & P/N

The **Import S/N & P/N** button imports serial numbers and part numbers from connected monitors. To import serial numbers and part numbers, click the **Import S/N & P/N** button.

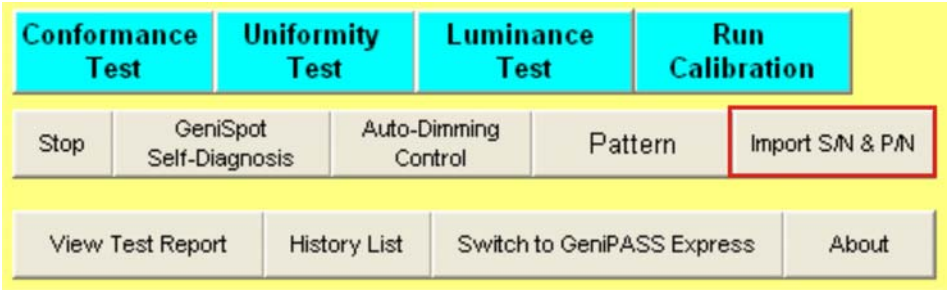

Figure 6-7: Import S/N & P/N

6.6 Switch to GeniPASS Express

The **Switch to GeniPASS Express** button switches the user interface from the GeniPASS Professional interface to the GeniPASS Express interface. To switch to the GeniPASS Express interface, click the **Switch to GeniPASS Express** button.

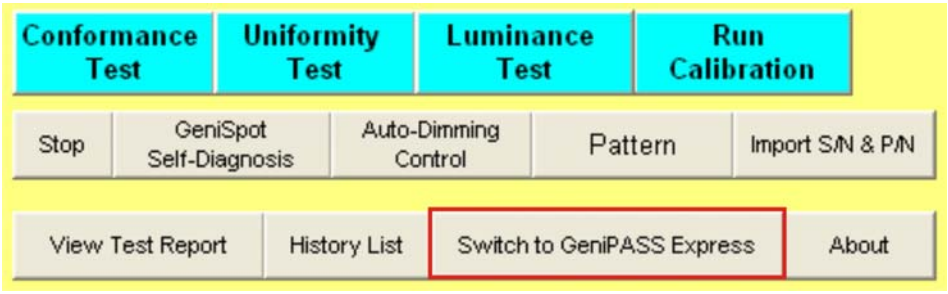

Figure 6-8: Switch to GeniPASS Express

6.7 Select Your Monitor

The **Select Your Monitor** drop-down list allows easy selection of the monitor to be tested and calibrated.

To select a monitor, click on the drop-down list highlighted below, and select the monitor.

Figure 6-9: Select Your Monitor

Appendix

A

Compatibility

NOTE:

The compatible items described here have been tested by the IEI R&D team and found to be compatible with the GeniSPOT

A.1 Compatible Operating Systems

The following operating systems have been successfully run on the GeniSPOT.

- MS-DOS 6.22
- Microsoft Windows XP (32-bit)
- Microsoft Windows 2000
- Red Hat 9.0

A.2 Compatible Processors

The following Intel® Socket 478 processors have been successfully tested on the GeniSPOT

CPU	FSB	Frequency	L2 Cache
Intel® Pentium 4	800MHz	3.2GHz	1MB

A.3 Compatible Memory Modules

NOTE:

The memory modules listed below have been tested on the GeniSPOT other memory modules that comply with the specifications may also work on the GeniSPOT but have not been tested.

The following memory modules have been successfully tested on the GeniSPOT.

Manufacturer	Model No.	Capacity	Speed	Type
Kingston	KVR400X64C3A	512 MB	400 MHz	DDR

Appendix

B

Hazardous Materials Disclosure

B.1 Hazardous Materials Disclosure Table for IPB Products Certified as RoHS Compliant Under 2002/95/EC Without Mercury

The details provided in this appendix are to ensure that the product is compliant with the Peoples Republic of China (China) RoHS standards. The table below acknowledges the presences of small quantities of certain materials in the product, and is applicable to China RoHS only.

A label will be placed on each product to indicate the estimated “Environmentally Friendly Use Period” (EFUP). This is an estimate of the number of years that these substances would “not leak out or undergo abrupt change.” This product may contain replaceable sub-assemblies/components which have a shorter EFUP such as batteries and lamps. These components will be separately marked.

Please refer to the table on the next page.

Part Name	Toxic or Hazardous Substances and Elements					
	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent Chromium (CR(VI))	Polybrominated Biphenyls (PBB)	Polybrominated Diphenyl Ethers (PBDE)
Housing	X	O	O	O	O	X
Display	X	O	O	O	O	X
Printed Circuit Board	X	O	O	O	O	X
Metal Fasteners	X	O	O	O	O	O
Cable Assembly	X	O	O	O	O	X
Fan Assembly	X	O	O	O	O	X
Power Supply Assemblies	X	O	O	O	O	X
Battery	O	O	O	O	O	O

O: This toxic or hazardous substance is contained in all of the homogeneous materials for the part is below the limit requirement in SJ/T11363-2006

X: This toxic or hazardous substance is contained in at least one of the homogeneous materials for this part is above the limit requirement in SJ/T11363-2006

此附件旨在确保本产品符合中国 RoHS 标准。以下表格标示此产品中某有毒物质的含量符合中国 RoHS 标准规定的限量要求。

本产品上会附有"环境友好使用期限"的标签，此期限是估算这些物质"不会有泄漏或突变"的年限。本产品可能包含有较短的环境友好使用期限的可替换元件，像是电池或灯管，这些元件将会单独标示出来。

部件名称	有毒有害物质或元素					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (CR(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
壳体	X	O	O	O	O	X
显示	X	O	O	O	O	X
印刷电路板	X	O	O	O	O	X
金属螺帽	X	O	O	O	O	O
电缆组装	X	O	O	O	O	X
风扇组装	X	O	O	O	O	X
电力供应组装	X	O	O	O	O	X
电池	O	O	O	O	O	O

O: 表示该有毒有害物质在该部件所有物质材料中的含量均在 SJ/T11363-2006 标准规定的限量要求以下。

X: 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出 SJ/T11363-2006 标准规定的限量要求。

Index